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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/817,511  | 04/02/2004  | John Bugel           | VTE-152-B           | 3160             |
| 22825   | 7590        | 11/10/2005           | EXAMINER            |                  |
| WILLIAM M HANLON, JR<br>YOUNG & BASILE, PC<br>3001 WEST BIG BEAVER ROAD<br>SUITE 624<br>TROY, MI 48084-3107 |             |                      | LOPEZ, FRANK D      |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 3745                |                  |

DATE MAILED: 11/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/817,511 | <b>Applicant(s)</b><br>BUGEL ET AL. |  |
|                              | <b>Examiner</b><br>F. Daniel Lopez   | <b>Art Unit</b><br>3745             |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-22 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/12, 9/29, 12/10/04; 4/11, 5/2, 7/14, 8/25 05</u> | 6) <input type="checkbox"/> Other: ____  |

### ***Drawings***

The drawings are objected to: in fig 2 blocks 114 and 124 should read - MONITOR POSITION SENSOR AND RESET HOME-(see e.g. page 12 paragraph 29 line 3-4); in figure 3 the manifold must be labeled to understand which element is the manifold and a means biasing the piston toward a centered position should be shown.

### ***Specification***

The description is objected to: in the specification the multi-valve manifold is characterized by the statement as "The valves are connected...to each other through a multi-valve manifold" (e.g. page 13 paragraph 32 line 5-6). It would appear that the manifold is a multi-port manifold, not a multi-valve manifold, since the manifold has a plurality of ports, connected to valves, but not a plurality of valves. A multi-port manifold is redundant, since a manifold is defined as having a plurality of ports. Suggest that the "multi-valve" be deleted throughout the specification.

### ***Claim Rejections - 35 USC § 112***

Claims 1-22 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Throughout the claims (e.g. claim 1 line 4 -manifold-- should replace "multi-valve manifold", for the reasons discussed in the discussion of the specification. In some of the claims, the multi-valve manifold is attached to one control valve (e.g. claim 1 line 6-7), which further confuses what a "multi-valve manifold" is.

In claim 1 line 16, and claim 19 line 15 "a control program operably connected to...valve" and claim 10 line 16-19 "controlling actuation of the at least two valves...with a control program operably connected to the at least two valves" are confusing, since a control program is a set of instructions. Suggest that -controller having a-- be added before "control program" of line 14. Dependent claims (e.g. claims 7 and 8) should be similarly modified.

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Claims not specifically mentioned are indefinite, since they depend from one of the above claims.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 1 and 3-5 are rejected under 35 U.S.C. § 103 as being unpatentable over Stephenson et al in view of Rector et al and Yeaple. Stephenson et al discloses an apparatus for controlling a position of a fluid cylinder (16, 36), having first and second expandable chambers (e.g. 18, 19), defined by a piston (e.g. 15), adjacent first and second ends, respectively, of the cylinder, comprising first and second pressure sensors (e.g. 29, 30, respectively) associated with the first and second chambers, respectively; first and second electrically actuated proportional flow valves (e.g. 21, 22, respectively) for selectively and proportionally controlling flow into and out of, respectively, of the first chamber; a controller having a control program operably connected to the valves and pressure sensors, to control the valves in response to pressures measured by the pressure sensor; but does not disclose that the valves are connected to a manifold having an inlet port an exhaust port and an outlet port; or that there is at least one discrete position sensor for sensing a discrete predetermined position of the piston, wherein the position sensor is connected to the controller, such that the valve is controlled in response to the position measured by the position sensor.

Rector et al teaches, for an apparatus for controlling a position of a fluid cylinder (16), having first and second expandable chambers (17, 18), defined by a piston, adjacent first and second ends, respectively, of the cylinder, comprising electrically actuated flow valve (36) for controlling flow into and out of the first chamber; and a controller (73) having a control program operably connected to and controlling the valve; that there is at least one discrete position sensor (e.g. 74) for sensing a discrete predetermined position of the piston, wherein the position sensor is connected to the controller, such that the valve is controlled in response to the position measured by the position sensor, for the purpose of reducing the speed of the piston when it nears its end of stroke position (column 1 line 66- column 2 line 3).

Since Stephenson et al and Rector et al are both from the same field of endeavor, the teachings disclosed by Rector et al would have been recognized in the pertinent art of Stephenson et al. It would have been obvious at the time the invention was made to one having ordinary skill in the art to include at least one discrete position sensor for sensing a discrete predetermined position of the piston of Stephenson et al, wherein the position sensor is connected to the controller, such that the valve is controlled in response to the position measured by the position sensor, as taught by Rector et al, for the purpose of reducing the speed of the piston when it nears its end of stroke position.

Yeaple teaches, for a set of valves, that the valves can be connected to a manifold (including several different types) having associated porting, for the purpose of enhancing performance and decreasing leakage (page 73 paragraph entitled Modular Valving, each type of manifold connected valving has their own specific advantage over the others).

Since Stephenson et al has a plurality of valves and Yeaple teaches standard ways to combine a plurality of valves together; it would have been obvious at the time the invention was made to one having ordinary skill in the art to connect the valves of Stephenson et al to a manifold having associated porting, as taught by Yeaple, for the purpose of enhancing performance and decreasing leakage.

Claims 1-8, 10-17 and 19-22 are rejected under 35 U.S.C. § 103 as being unpatentable over Stephenson et al in view of Morita et al, Rector et al and Yeaple. Stephenson et al discloses an apparatus for controlling a position of a hydraulic type fluid cylinder (16, 36), having first and second expandable chambers (e.g. 18, 19), defined by a piston (e.g. 15), adjacent first and second ends, respectively, of the cylinder, and method, comprising first and second pressure sensors (e.g. 29, 30, respectively) associated with the first and second chambers, respectively; first, second, third and fourth electrically actuated proportional flow valves (e.g. 21, 22, 23, 24, respectively) for selectively and proportionally controlling flow into and out of, respectively, of the first and second chambers, respectively; a controller having a control program operably connected to the valves and pressure sensors, to control the valves in response to pressures measured by the pressure sensor; but does not disclose that the valves are connected to a manifold having an inlet port an exhaust port and an outlet port; that there is first, second and third position sensors located adjacent a midpoint of the operating stroke and adjacent an end and an opposite end of the travel of the piston, respectively, for sensing discrete predetermined positions of the piston, wherein the position sensors are connected to the controller, such that the valve is controlled in response to the positions measured by the position sensors; or that the controller initializes a home position when the piston is sensed by the first position sensor, and calculates a required pressure to move the piston a desired distance from the midpoint position.

Morita et al teaches, for an apparatus for controlling a position of a air type fluid cylinder (34), having first and second expandable chambers (34a, 34b), defined by a piston (36), adjacent first and second ends, respectively, of the cylinder, and method, comprising electrically actuated flow valve (30) for controlling flow into and out of the first chamber; and a controller (90) having a control program operably connected to and controlling the valve; that there is first, second and third position sensors (e.g. 38, 42, 44, respectively) located adjacent a midpoint of the operating stroke and adjacent an end and an opposite end of the travel of the piston, respectively, for sensing discrete predetermined positions of the piston, wherein the position sensors are

connected to the controller, such that the valve is controlled in response to the positions measured by the position sensors, that the controller initializes a home position when the piston is sensed by the first position sensor (by steps s6 and s7 of fig 5), and calculates a required pressure to move the piston a desired distance from the midpoint position (e.g. steps s8-s13, fig 5 and 6), for the purpose of stopping the piston at its end of stroke position in a shock free state, without requiring any position adjustment of the position sensors (column 1 line 54-58).

Rector et al teaches, for an apparatus for controlling a position of a hydraulic type fluid cylinder (16), having first and second expandable chambers (17, 18), defined by a piston, adjacent first and second ends, respectively, of the cylinder, and method, comprising electrically actuated flow valve (36) for controlling flow into and out of the first chamber; and a controller (73) having a control program operably connected to and controlling the valve; that there is at least one discrete position sensor (e.g. 74) for sensing a discrete predetermined position of the piston, wherein the position sensor is connected to the controller, such that the valve is controlled in response to the position measured by the position sensor, for the purpose of reducing the speed of the piston when it nears its end of stroke position (column 1 line 66-column 2 line 3), to limit shocks when stopped at its end position (e.g. column 1 line 15-21).

Since Stephenson et al discloses a hydraulic type cylinder, since Rector et al teaches a need for limiting shocks when a piston of a hydraulic type cylinder approaches an end position, and since Morita et al teaches a method of limiting shocks when a piston of a fluid cylinder approaches an end position; one having ordinary skill in the art would recognize that the purpose disclosed by Morita et al would have been recognized in the pertinent art of Stephenson et al, due to the teachings of Rector et al. It would have been obvious at the time the invention was made to one having ordinary skill in the art to include first, second and third position sensors located adjacent a midpoint of the operating stroke and adjacent an end and an opposite end of the travel of the piston of Stephenson et al, respectively, for sensing discrete predetermined positions of the piston, wherein the position sensors

are connected to the controller, such that the valve is controlled in response to the positions measured by the position sensors, with the controller initializing a home position when the piston is sensed by the first position sensor, and calculates a required pressure to move the piston a desired distance from the midpoint position, as taught by Morita et al, for the purpose of stopping the piston at its end of stroke position in a shock free state, without requiring any position adjustment of the position sensors.

Yeaple teaches, for a set of valves, that the valves can be connected to a manifold (including several different types) having associated porting, for the purpose of enhancing performance and decreasing leakage (page 73 paragraph entitled Modular Valving, each type of manifold connected valving has their own specific advantage over the others).

Since Stephenson et al has a plurality of valves and Yeaple teaches standard ways to combine a plurality of valves together; it would have been obvious at the time the invention was made to one having ordinary skill in the art to connect the valves of Stephenson et al to a manifold having associated porting, as taught by Yeaple, for the purpose of enhancing performance and decreasing leakage.

Claim 9 and claims 9 and 18 are rejected under 35 U.S.C. § 103 as being unpatentable over Stephenson et al in view of Rector et al and Yeaple, as applied to claim 1 above, and over Stephenson et al in view of Morita et al. Rector et al and Yeaple, as applied to claim 1 and 10, respectively, above, respectively, and further in view of Neilson et al. The modified Stephenson et al discloses all of the elements of claim 9, or claims 9 and 18, respectively; but does not disclose that there is means for biasing the piston toward the midpoint position.

Neilson et al teaches, for an apparatus for controlling a position of a hydraulic type fluid cylinder (12), having first and second expandable chambers, defined by a piston (14), adjacent first and second ends (20, 26), respectively, of the cylinder, and method, comprising a flow valve (72) for controlling flow into and out of the first chamber; that there is means for biasing (30) the piston toward the midpoint position.



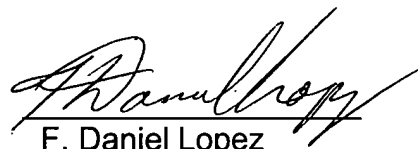
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Since the cylinders of Stephenson et al and Neilson et al are functionally equivalent in the piston art, it would have been obvious at the time the invention was made to one having ordinary skill in the art to add a means for biasing the piston of Stephenson et al toward the midpoint position, as taught by Neilson et al, as a matter of engineering expediency.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Lopez whose telephone number is 571-272-4821. The examiner can normally be reached on Monday-Thursday from 6:15 AM -3:45 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Look, can be reached on 571-272-4820. The fax number for this group is 571-273-8300. Any inquiry of a general nature should be directed to the Help Desk, whose telephone number is 1-800-PTO-9199.

A handwritten signature in black ink, appearing to read "F. Daniel Lopez", is written over a horizontal line.

F. Daniel Lopez  
Primary Examiner  
Art Unit 3745  
September 27, 2005